



QUALITY ASSURANCE PROGRAM FOR CONSTRUCTION OVERVIEW AND DESCRIPTION

INTRODUCTION

The Iowa Department of Transportation (DOT) has established the following Quality Assurance Program to assure that the material and workmanship incorporated into any highway construction project are in reasonable conformity with the requirements of the approved plans and Specifications, including approved changes. The program reflects conformance with the criteria contained in regulation for Quality Assurance Procedures for Construction, published as 23CFR 637(B) on June 29, 1995. It consists of an Acceptance Program and an Independent Assurance Program (IAP), both of which are based on test results obtained by qualified persons and equipment.

This Quality Assurance Program allows for the use of the contractor's test results for acceptance if satisfactory correlation exists between the contractor's test results and the contracting agency test results in accordance with IM 216. The IAP, as presently structured, is conducted exclusively by the contracting agency. The acceptance of all materials and workmanship is the responsibility of the engineer.

ACCEPTANCE PROGRAM

Materials incorporated into highway construction projects shall be subject to sampling and testing, as well as Quality Control (QC) sampling and testing when required by specification, as follows:

A. Sampling and Testing Frequency and Point of Acceptance

Sampling and testing will be performed in accordance with location, frequency and procedures identified in IM 204. This guide also establishes frequency of verification sampling and testing.

B. Quality Control Sampling and Testing

Contractor-performed QC sampling and testing may be used as part of an acceptance decision when required or allowed by specifications. Contractor QC sampling and testing personnel, laboratories, and equipment shall be qualified in accordance with the Iowa DOT Training and Certification Program (IM 213) and the Laboratory Qualification Program (IM 208), and shall be evaluated under the Independent Assurance Program.

C. Verification Sampling and Testing

QC test results for the quality of identified critical materials will be validated by verification test results. Verification of quality is performed on critical materials, through independent sampling and testing, at a frequency identified in IM 204. Qualified contracting agency personnel will perform verification sampling and testing. If verification test results do not comply, agency personnel, to determine the source of discrepancy and deficiency, will promptly perform an engineering review of test procedures, equipment and material quality. Corrective action shall be identified, implemented and will be followed by additional verification sampling and testing.

Independent assurance of the materials verification process is accomplished through successful accreditation of the Central Materials Laboratory and District Laboratories through the AASHTO Materials Reference Laboratory (AMRL) Program.

D. Quality Control Plans

When required by the Specifications, a Quality Control Plan (QCP) must be developed by the contractor and submitted to the engineer for review. Minimum requirements for the QCP will be provided in an IM or specification.

E. Dispute Resolution System

When QC test results are used in the acceptance decision, testing disputes arising between the contracting agency and the contractor shall be resolved in a reliable, unbiased manner or an evaluation performed by the Iowa DOT Central Materials Laboratory. Resolution decisions by the Iowa DOT Central Materials Laboratory will be final.

INDEPENDENT ASSURANCE PROGRAM

This Independent Assurance Program will evaluate all sampling and testing procedures, personnel, and equipment used as part of an acceptance decision.

The IAP includes both system- and project-based approaches defined as follows:

- Project Approach. The frequency of IAP activities is based primarily on quantities of materials being tested and requires minimums (as per IM 204) on every project.
- System Approach. The frequency of IAP activities is based on time intervals, regardless of the number of tests, quantities of materials, or numbers of projects being tested by the individual and equipment being evaluated.

The systems approach for IAP will be implemented statewide in 1999 for evaluation of city, county, and state equipment, procedures, and personnel involved with project acceptance. Within implementation of the systems approach, the District Materials Engineer may find it more appropriate to retain use of the project approach for IAP on specific projects when the systems approach cannot be effectively applied.

A. Sampling and Testing Frequency and Location

Independent assurance sampling and testing will be performed in accordance with location, frequency, and procedures established in IM 204. Testing procedures performed by the Central Materials Laboratory are not subject to IAP.

B. Testing Equipment

Testing equipment used for IAP sampling and testing shall be other than that used for performing verification or QC testing. Any equipment used to perform verification and/or QC sampling and testing, used in making an acceptance decision, shall be evaluated by IAP sampling and testing personnel. This evaluation shall include calibration checks and split or proficiency sample tests. Equipment calibration requirements and frequency, with respect to this IAP evaluation, are established in IM 208. Acceptable tolerance limits for the comparison of test results from split or proficiency samples are provided in IM 216.

C. Testing Personnel

Individuals performing QC sampling and testing shall be evaluated by IAP sampling and testing personnel. The individuals performing IAP sampling and testing will be other than those who perform QC testing. This evaluation shall include observations and split or proficiency sample testing. Acceptable tolerance limits for the comparison of test results for split or proficiency samples are provided in IM 216.

D. Comparison of Test Results

A prompt comparison of the test results obtained by the individual being evaluated and the IAP tester will be performed by the engineer. If results of the comparisons do not comply with tolerances provided in IM 216, an engineering review of the test procedures and equipment shall be performed immediately to determine the source of the discrepancy. Corrective actions must be identified, incorporated as appropriate and followed by additional IAP testing. Test results from all the samples involved in the IAP will be documented and reported in the appropriate **District** or project files.

E. Annual Report of IAP Results

The Central Materials Office will compose and submit an annual report to the FHWA Division Administrator summarizing the results of the Iowa DOT's systems approach IA Program. This report will identify the number of sampling and testing personnel evaluated by systems approach IA testing, the number of evaluations found to be acceptable and unacceptable, as well as a summary of any significant system-wide corrective actions taken.